Serial No. 10/828,745
Amdt. Dated June 9, 2007
Reply to Office action of May 10, 2007

Amendments to the Drawings:

The attached sheet of drawings includes Fig. 3, depicting the embodiment of the invention described in paragraph [0050] of the specification.

Attachment: New Sheet with Fig. 3

REMARKS

Applicants sincerely appreciate the courtesy extended by Examiner Issing at the interview conducted on June 6, 2007. Claim 31, which is the only pending independent claim, is hereby amended to incorporate the changes discussed at the interview, which were indicated to appear to overcome the cited prior art.

More specifically, claim 31 calls for first and second antennas located at first and second points in fixed, known relation to each other on a structure. The antennas communicate with first and second GNSS receivers, which utilize a common clock. An orientation device determines an orientation of the structure. A position solution processor compensates for a non-receiving condition of one antenna and determines the GNSS-defined positions of the first and second points based: (1) GNSS signals received by one of the antennas; (2) an input signal from the clock; and (3) the known relative orientation of the points. A structure attitude determining processor determines the attitude of the structure based on: (1) the determined GNSS-defined positions of said first and second points; and (2) the orientation of the structure.

Claim 31 was rejected under 35 U.S.C. 102(e) based on Rorabaugh U.S. 6,922,635, which discloses a method and system for determining the absolute positions of mobile communication devices. However, the Rorabaugh communication devices are independently mobile and therefore not in fixed relation to each other. For example, see Fig. 4 showing GPS-enabled mobile communication devices 101A and 101B, which are part of a wirelessly networked group wherein each has line-of-site with only part of the necessary satellite constellation (121-125) due to a blocking structure 115.

The combination comprising the system of amended claim 31 is distinguishable based on the first and second antennas being located at respective first and second points on the structure, which are in fixed, known locations relative to the structure. Claim 31 also calls for an orientation device providing an input to the position solution processor corresponding to the orientation of the structure, which compensates for a non-receiving condition of one of the antennas. Still further, claim 31 calls for a structure attitude determining processor utilizing the GNSS-defined positions of the first and second points and the orientation of the structure. All of the foregoing specific limitations, in the claimed combination, distinguish Rorabaugh and the other cited art.

Also pursuant to the Examiner's requirement, Fig. 3 has been added showing the aspect of the invention comprising a vessel (e.g., a barge) as described in paragraph [0050] of the specification. This paragraph of the specification is hereby amended to incorporate the reference numerals in Fig. 3. No new matter has been added.

Based on the foregoing, this application is in condition for allowance and notice to this effect is earnestly solicited. The examiner is invited to contact the undersigned by telephone if prosecution of this application can be expedited thereby.

The Commissioner is authorized to charge any excess fees to Deposit Account No. 503-424.

Substance of the June 6, 2007 Interview

1. No exhibits were shown or demonstrations conducted.

2. Claim 31 was discussed.

3. Rorabaugh U.S. 6,922,635 was discussed.

4. The principle proposed amendments of a substantive nature related to amending claim 31 as reflected on the attachment to the Interview Summary.

5. The general thrust of the principal arguments was that clarification of the determination of structure attitude and conditions of lost signal reception at an antenna, as reflected in the proposed amendments to claim 31, would overcome the cited art.

6. The participants also discussed adding new drawing figure showing the system on a structure (e.g., barge as described in the specification). No other pertinent matters were discussed.

7. The general results or outcome of the interview were that the proposed amendments to claim 31 appears to overcome the cited prior art, as reflected on the Interview Summary.

I hereby certify that this paper is being filed by facsimile transmission (571-273-8300) with the U.S. Patent and Trademark Office.

Date of fax transmission: June 9, 2007

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Respectfully Submitted,

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